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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,663	03/18/2004	Masuhiko Natsuhara	39.035	2662

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JUDGE PATENT FIRM  
RIVIERE SHUKUGAWA 3RD FL.  
3-1 WAKAMATSU-CHO  
NISHINOMIYA-SHI, HYOGO, 662-0035  
JAPAN

EXAMINER

PAIK, SANG YEOP

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

7N

<b>Office Action Summary</b>	<b>Application No.</b> 10/708,663	<b>Applicant(s)</b> NATSUHARA ET AL.	
	<b>Examiner</b> Sang Y Paik	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/14/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear what structure is meant by the lead circuit having the three-dimensional intersection with the heating element. In the drawing figure 3, the lead circuit is showing to have an electrical connection or intersection at a point that is in one dimension with the surface of the heating element. The language seems to suggest that three dimensions of the lead circuit are making an intersection with the heating element which is not shown or reasonably teach one skilled in the art how to make or use the invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 7, it is recited that electric power is supplied "from without," and it is unclear what element or how the power is supplied "without".

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-5, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Burkhart et al (US 6,469,283).

Burkhart shows a ceramic susceptor having a retaining side, a plurality of concentric circular heating elements providing a plurality of discrete heating zones formed in the ceramic susceptor, and a lead circuit formed on a different plane or surface than the surface on which the heating elements are provided. With respect to claim 5, the claimed temperature uniformity, which is the property or function, is inherently met by Burkhart having the substantially same or identical to that of the claimed structure.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burkhart et al (US 6,469,283) in view of Kojima et al (US 4,733,056) or Nozaki et al (US 5,264,681).

Burkhart shows the susceptor claimed except the lead circuit having smaller resistance than the heating circuit.

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Kojima and Nozaki show it is well known in the art to having a lead circuit or lead wire having a resistance made smaller than the heating element so that heat is not generated in the lead circuit. In view of Kojima or Nozaki, it would have been obvious to one of ordinary skill in the art to adapt Burkhart with the lead circuit having less resistance than the heating element to provide the current without generating substantial heat along the lead circuit.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burkhart et al (US 6,469,283) in view of Yamaguchi et al (US 6,376,811) or Soma et al (US 5,231,690).

Burkhart shows the susceptor claimed except the electrodes formed in the center of the susceptor and connected to the lead circuit.

Yamaguchi shows the electrodes (8, 9) provided in the center of the heating device and connected to the lead circuit (5, 6). Soma shows the lead circuits that can be formed on the peripheral region as well as in the center region of a heating device with the leads extending to form the electrodes. In view of Yamaguchi or Soma, it would have been obvious to one of ordinary skill in the art to form the electrodes in the center of the susceptor to route the lead circuits and corresponding electrodes as an alternative arrangement to conveniently make the electrical power connection to the heating elements.

10. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burkhart et al (US 6,469,283) in view of Kawanabe et al (US 6,133,557).

Burkhart shows the susceptor claimed except the susceptor having the thickness of 5 mm or more.

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Kawanabe shows a susceptor having the thickness of 5 mm or more. Kawanabe further shows that the susceptor is made of aluminum nitride with the sintering aids including yttrium in .001 to 1 wt %.

In view of Kawanabe, it would have been obvious to one of ordinary skill in the art to adapt Burkhart with the claimed susceptor thickness to provide a mechanically sufficient ceramic susceptor to hold and heat a semiconductor wafer and further adapt with the claimed ceramic materials and sintering aids to make the susceptor that can withstand a high temperature and provide a corrosion resistance.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sang Y Paik  
Primary Examiner  
Art Unit 3742

S. Y. Paik

syp